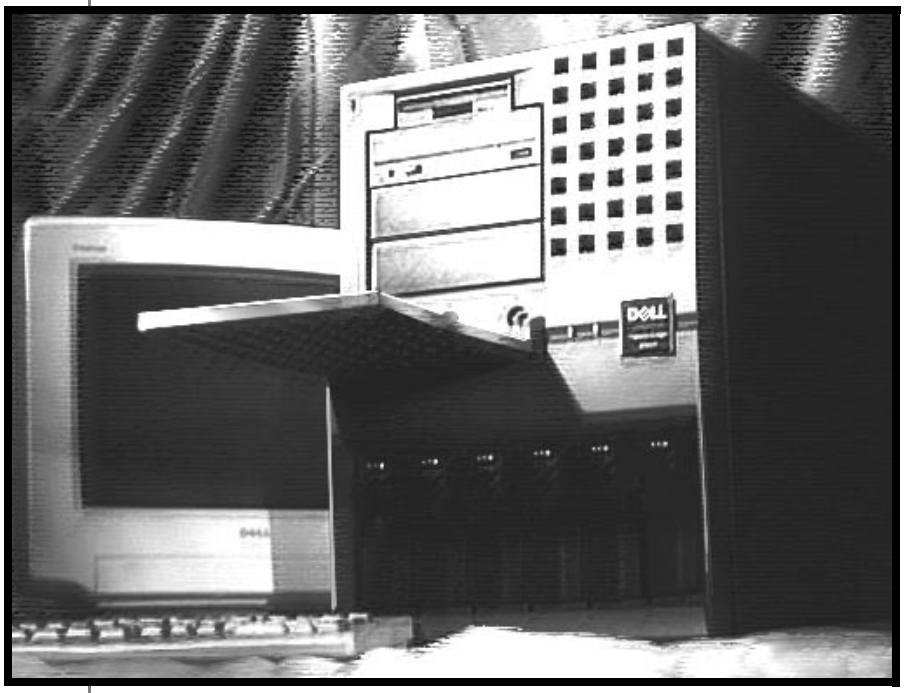
Dell™ PowerEdge™ 4300

SYSTEM BOARD UPGRADE INSTALLATION



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Notes, Cautions, and Warnings

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold type or in italic type. These blocks are notes, cautions, and warnings, and they are used as follows:

NOTE: A NOTE indicates important information that helps you make better use of your computer system.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates the potential for bodily harm and tells you how to avoid the problem.

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Dell™ PowerEdge™ 4300 System Board Upgrade Installation

WARNING: The power supplies in the PowerEdge 4300 computer system produce high voltages and energy hazards, which can cause bodily harm. Only trained service technicians are authorized to remove the computer cover and access any of the components inside the computer.

This guide provides instructions for removing the system board from your Dell PowerEdge 4300 system and installing the new system board.

Your kit consists of a replacement system board, a basic input/output system (BIOS) and firmware upgrade diskette, and instructions.

Before You Begin

Before shutting down your system, view the system configuration screens in the System Setup program and/or the Resource Configuration Utility (RCU) and make a record of the settings (see your *User's Guide* for complete information). You will be installing a new system board and you must set the options to the same settings.

The upgrade procedure requires a #2 Phillips screwdriver. In addition, you should use a wrist grounding strap for electrostatic discharge (ESD) protection. Read the safety instructions in the following section.

Precautionary Measures

Before you remove the computer covers, perform the following steps in the sequence indicated.

CAUTION: Do not attempt to service the computer system yourself, except as explained in this guide and elsewhere in Dell documentation. Always follow installation and service instructions closely.

CAUTION: To help avoid possible damage to the system board, wait 5 seconds after turning off the system before removing a component from the system board or disconnecting a peripheral device from the computer.

1. **Turn off your computer and any peripherals.**

2. **Ground yourself by touching an unpainted metal surface on the chassis, such as the metal around the card-slot openings at the back of the computer, before touching anything inside your computer.**

   While you work, periodically touch an unpainted metal surface on the computer chassis to dissipate any static electricity that might harm internal components.

3. **Disconnect your computer and peripherals from their power sources. Also, disconnect any telephone or telecommunication lines from the computer.**

   Doing so reduces the potential for personal injury or shock.

In addition, take note of these safety guidelines when appropriate:

- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, make sure both connectors are correctly oriented and aligned.
- Handle components and cards with care. Don't touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a microprocessor chip by its edges, not by its pins.

Removing the System Board

Removing the system board of a PowerEdge 4300 system involves the following activities:

- Disconnecting power
- Removing expansion cards
- Removing the covers
- Removing the system board tray
- Removing the system board

Disconnecting Power

To disconnect power from a PowerEdge 4300 system, perform the following steps :

1. Disconnect the power cable from the electrical outlet, and then disconnect the other end of the cable from the power supply.

2. Press the locking bar in the power supply handle in and to the left (or lift up if the computer is in rack-mount position) until the latch disengages from the chassis (see Figure 1).

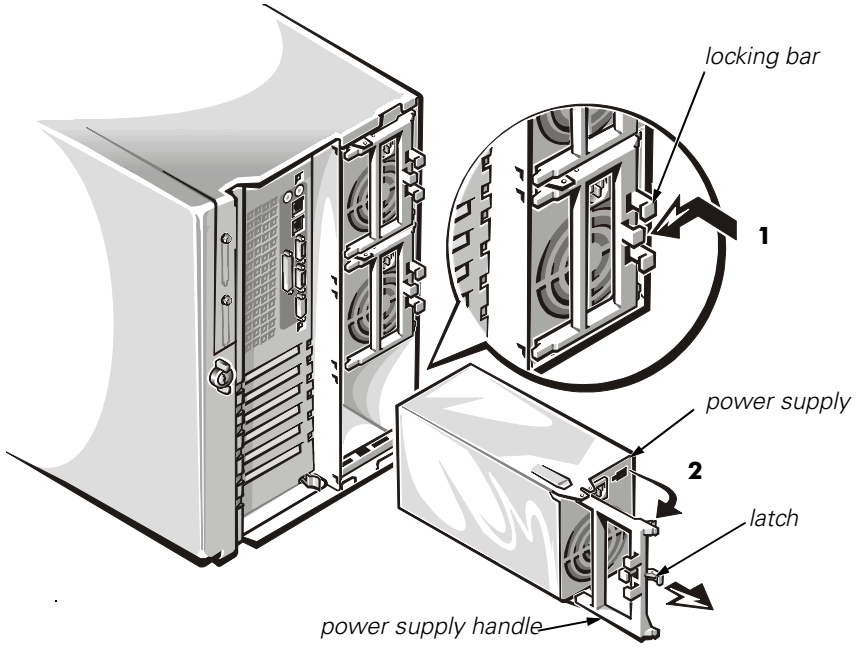

Figure 1. Power Supply Removal

3. Rotate the handle outward (forcing the power supply partially out of its bay), and pull the power supply the rest of the way out by the handle.

4. Repeat steps 1 through 3 to remove the remaining power supplies.

Removing the Expansion Cards

To remove the expansion cards, perform the following steps:

1. Open the expansion-card access door (see Figure 2).

   Record the location of each expansion card so that each card is installed into the same slot on the new system board.

2. Disconnect any cables attached to the expansion cards.

   Be sure to record the location of each cable before you disconnect it.

CAUTION: Do *not* use a tool to force the latch open.

3. For each card you are removing, press in and hold the clip on the back of the computer. At the same time, from inside the computer, press the *curved release lever in the middle of the expansion-card latch* toward the bottom of the card.

   After the release lever clicks into the latch cutout, rotate the latch away from the expansion-card bracket.

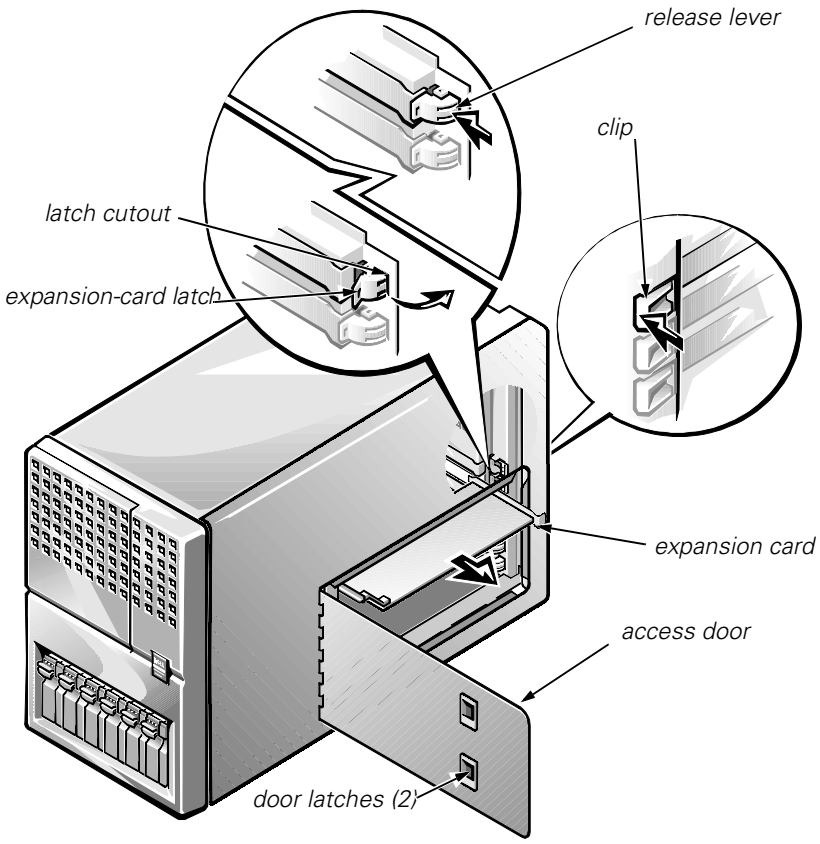

Figure 2. Expansion Card Removal

4. Release the inner end of the expansion card by pressing outward on the latch at the inner corner of the card.

5. Grasp the expansion card by its corners, and carefully remove it from the expansion-card connector.

   Be sure to record the location of each expansion card.

Removing the Covers

To remove the covers, perform the following steps:

1. Turn the keylock on the back edge of the cover to the unlocked position (see Figure 3).

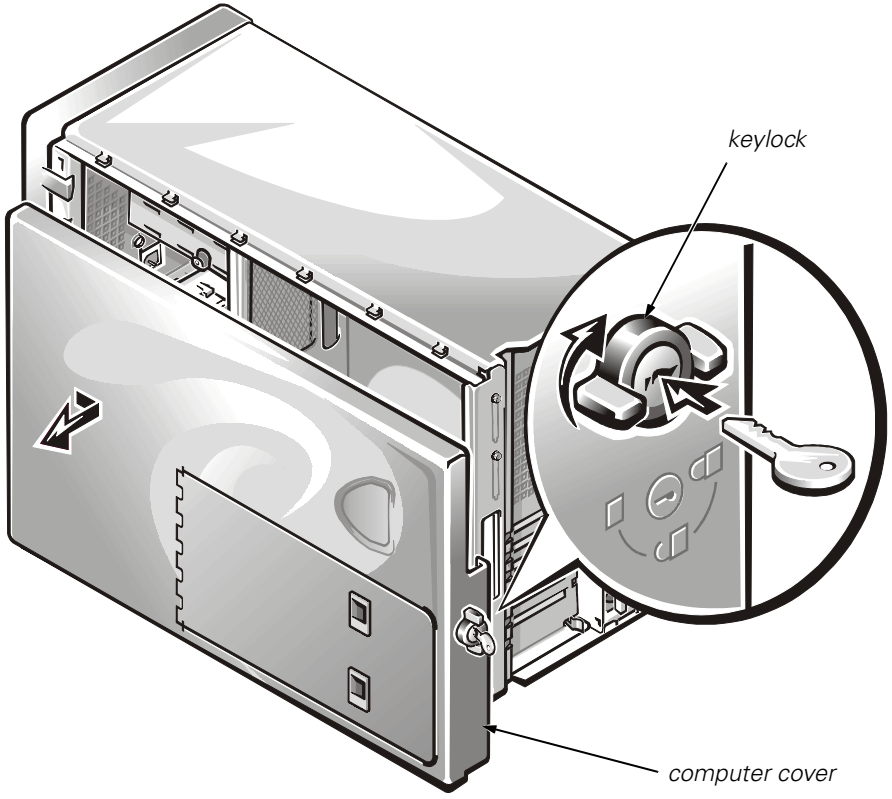

Figure 3. Computer Cover Removal

2. Slide the cover about a centimeter (half an inch) toward the back of the computer.
3. Grasp the top of the cover at both ends and lift it away from the chassis.

Removing the System Board Tray

To remove the system board tray, perform the following steps:

1. Disconnect all cables from the system board.

   When disconnecting the power cables from the system board, press the plastic latch on one side of the connector to release it.

2. Release the tray latch at the lower-back corner of the system board tray (see Figure 4) and pull the tray open to the service position. Then depress the latch again and pull the tray out of the chassis.

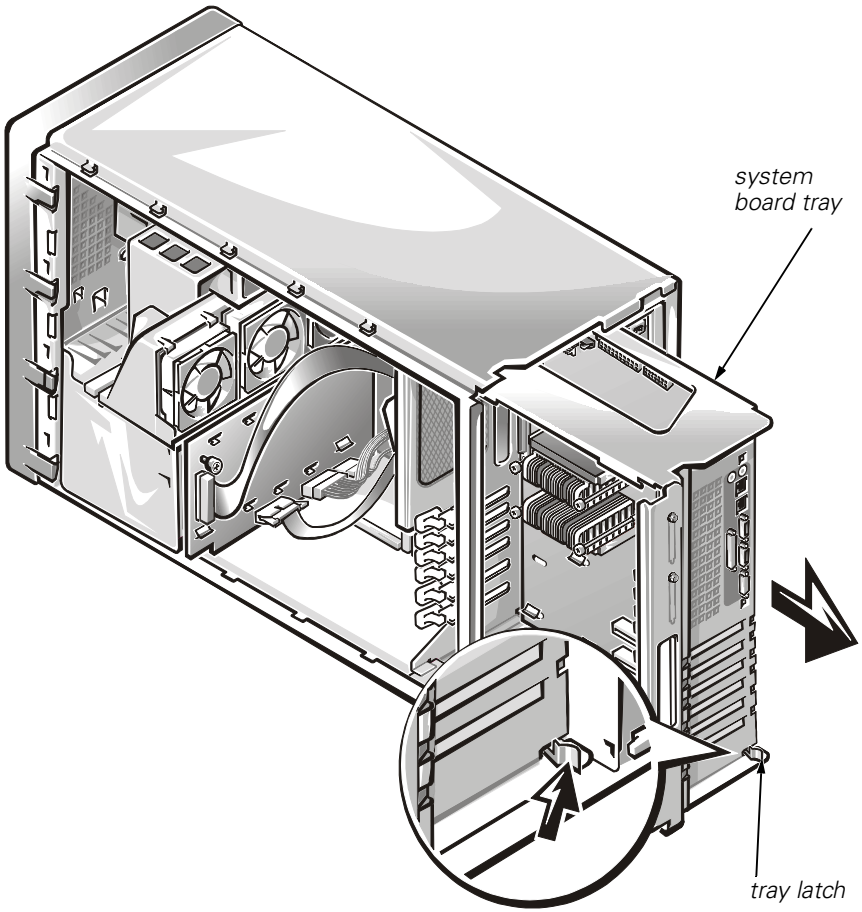

Figure 4. System-Board Tray Removal

Removing the System Board

To remove the system board from the system board tray, perform the following steps:

1. Loosen the thumbscrew securing the system board to the tray (see Figure 5).
2. Slide the system board to the left as shown in Figure 5 (toward the *inner* expansion-card guide brackets) about a centimeter (half an inch) to clear the chassis hooks, and remove the board.

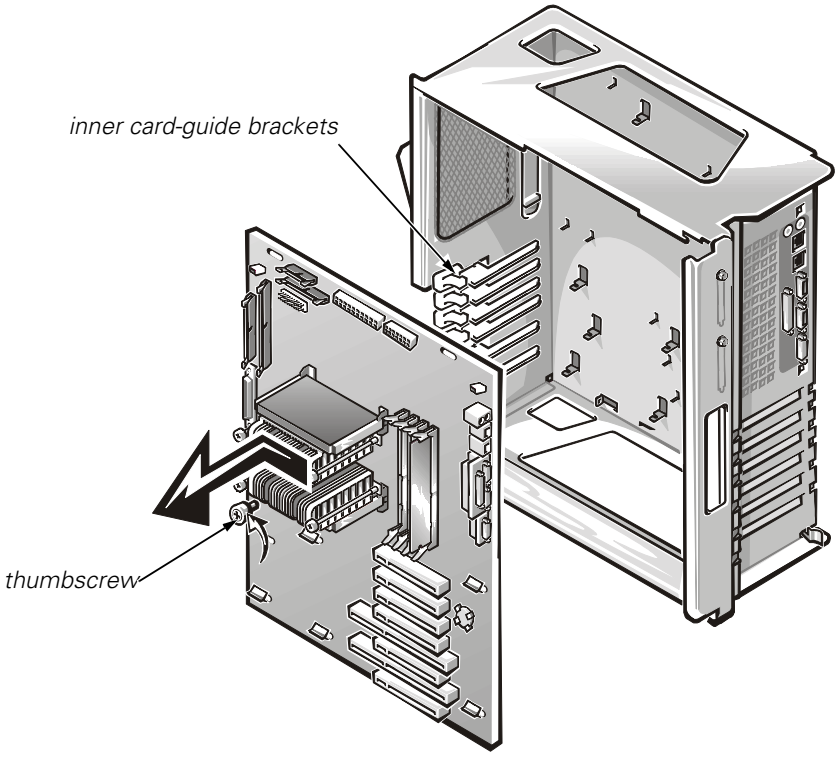

Figure 5. System Board Removal

3. Remove the DIMMs, SEC cartridge and heat sink assembly, and terminator card, and set them aside for installation on the new system board.

   Verify that all the jumper settings on the new system board are identical to those on the original board.

Installing the System Board

To install the new system board (see Figure 6) on the supporting subchassis, perform the following steps:

1. Position the system board over the system board tray so that the slots are aligned with the chassis hooks; then lower the board onto the tray.

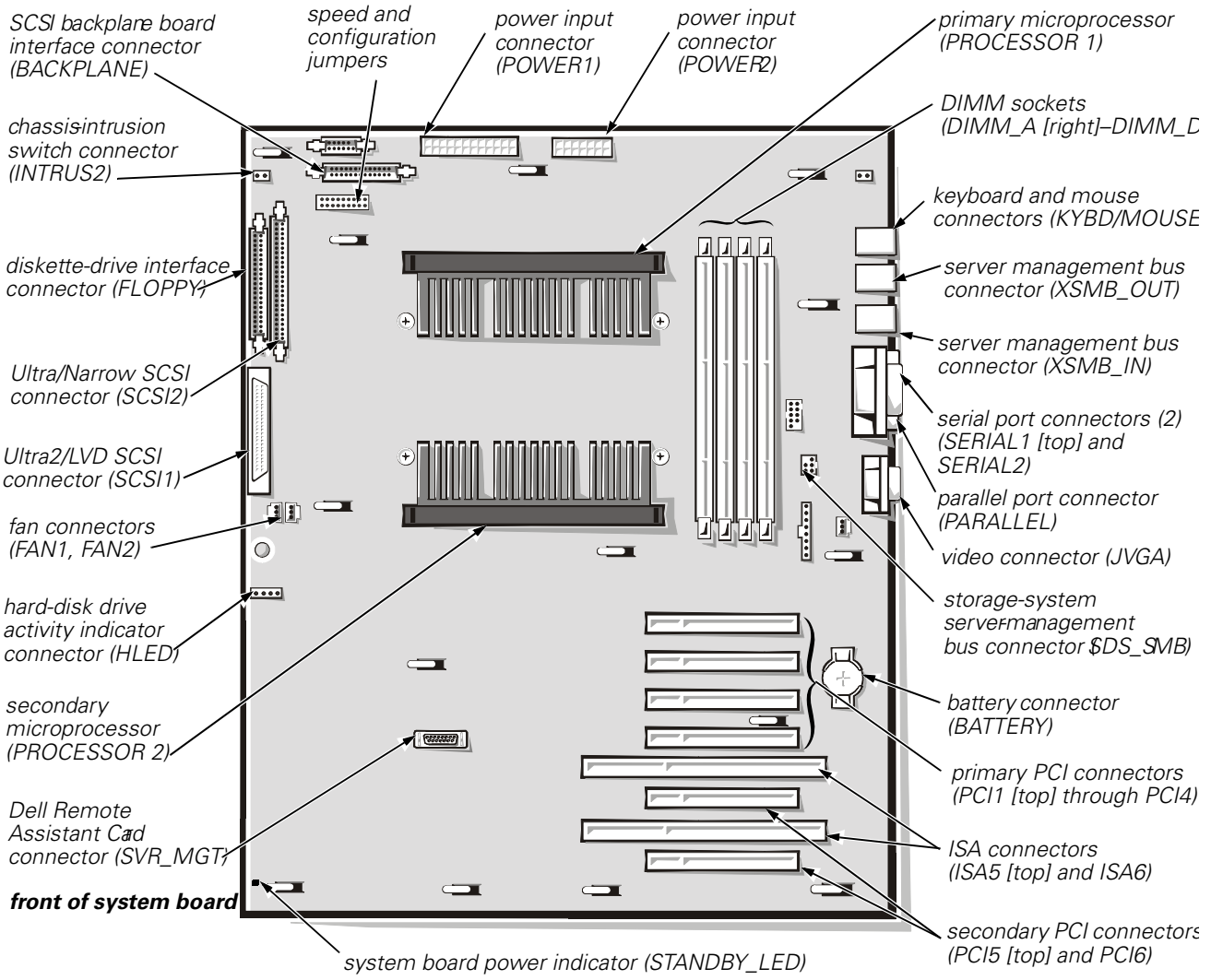
SCSI backplane board interface connector (BACKPLANE)
speed and configuration jumpers
power input connector (POWER1)
power input connector (POWER2)
primary microprocessor (PROCESSOR 1)
DIMM sockets (DIMM_A [right]–DIMM_D
chassis-intrusion switch connector (INTRUS2)
keyboard and mouse connectors (KYBD/MOUSE
diskette-drive interface connector (FLOPPY1)
server management bus connector (XSMB_OUT)
server management bus connector (XSMB_IN)
Ultra/Narrow SCSI connector (SCSI2)
serial port connectors (2) (SERIAL1 [top] and SERIAL2)
Ultra2/LVD SCSI connector (SCSI1)
parallel port connector (PARALLEL)
fan connectors (FAN1, FAN2)
video connector (JVGA)
storage-system server-management bus connector (SDS_SMB)
hard-disk drive activity indicator connector (HLED)
battery connector (BATTERY)
secondary microprocessor (PROCESSOR 2)
primary PCI connectors (PCI1 [top] through PCI4)
Dell Remote Assistant Card connector (SVR_MGT)
ISA connectors (ISA5 [top] and ISA6)
front of system board
secondary PCI connectors (PCI5 [top] and PCI6)
system board power indicator (STANDBY_LED)

Figure 6. System Board Components

2. Slide the system board to the right about a centimeter (half an inch) to lock the board in place (see Figure 7).

3. Secure the system board with the thumbscrew (see Figure 7).

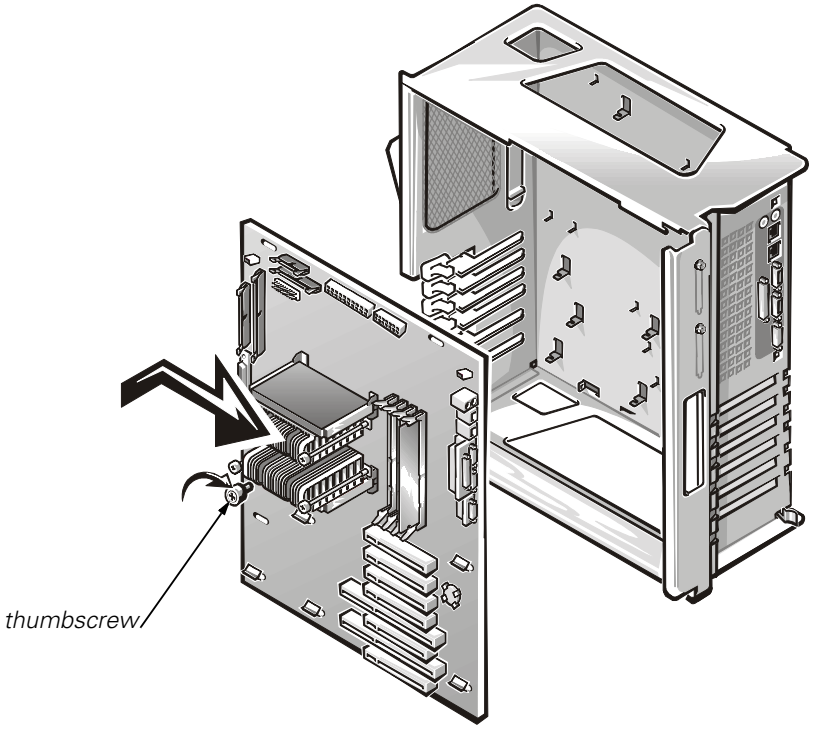

Figure 7. System Board Installation

Installing System Board Components

To install all the components you removed from the original system board on to the new system board, perform the following steps.

WARNING: When handling and installing microprocessors on the system board, take care to avoid sharp edges on the heat sink.

CAUTION: If your system supports more than two microprocessors but you are only installing one microprocessor, each of the remaining microprocessor connectors must have a terminator card installed.

1. Install all the components you removed from the original system board (microprocessors, terminator card[s], and DIMMs).

2. Install all internal cables to their connectors on the new system board (use the notes you made when you removed the cables from the original system board) .

3. Install all expansion cards in the same slots on the new system board (use the notes you made when you removed the cards from the original system board).

4. Install any internal panels, shrouds, or brackets.

5. Install the computer cover.

6. Install the power supplies :

   a. Slide the power supply *almost* all the way into its bay, allowing it to extend out about a half centimeter (a quarter of an inch).

   b. Rotate the handle back toward the power supply while fitting the two legs of the handle into the cutouts in the chassis wall, while at the same time pressing the power supply the rest of the way into the bay.

   c. Push the locking bar to the right (or down if the system is in rack-mount position) until the latch snaps into place, securing the power supply.

NOTE: The power supply will not operate unless the handle is snapped all the way into the securing position.

7. After starting up the system, run the Asset Tag utility.

   The Asset Tag utility allows you to enter a unique asset tag number for the new system board that you or your organization assign to the system. For information on running this utility, refer to your system *User's Guide*.

8. Compare the system configuration information with the copy of the system configuration settings you made in "Before You Begin," found earlier in this guide.

   Restore the system configuration information to the settings for the original board.

9. If you are using a padlock to secure your system, reinstall the padlock.

NOTE: After removing and replacing the system board, the chassis intrusion detector will cause the following message to be displayed at the next system start-up:

`ALERT! Cover was previously removed.`

10. Reset the chassis intrusion detector by entering the System Setup program and setting **Chassis Intrusion** to **Not Detected**. See "Using the System Setup Program," in your system *User's Guide* for instructions.

NOTE: If a setup password has been assigned by someone else, contact your network administrator for information on resetting the chassis intrusion detector.

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